FACILITY STATUS CHANGE FORM

Date Submitted:	Area:	Control #:
Jul 9, 2012	300 Area	D4-300-056
Originator:	**Facility ID:**	
John Harrie	3745A & 3745B	
Phone:	**Action Memorandum:**	
509.308.9935	Action Memorandum #3	

This form documents agreement among the parties listed below on the status of the facility D&D operations and the disposition of underlying soil in accordance with the applicable regulatory decision documents.

Section 1: Facility Status

☒ All D4 operations required by action memo complete.

☐ D4 operations required by action memo partially complete, remaining operations deferred.

Description of Completed Activities and Current Conditions:

Deactivation: Utility isolations were performed on the facility prior to beginning facility decontamination.

The following hazardous materials were removed prior to facility demolition: lead, asbestos, batteries, Freon, oil, light ballasts, HEPA filters and miscellaneous construction materials. Asbestos abatement was performed by certified asbestos workers. Hazardous material removal and waste disposition was performed in accordance with *Removal Action Work for 300 Area Facilities*, DOE/RL-2004-77, Revision 2 (RAWP).

Demolition: Above-grade demolition of the 3745A and the 3745B facilities were completed in August, 2007 and June 2007, respectively. Below-grade demolition of the 3745A and 3745B foundation slabs was completed in March of 2012. Backfill was finished in June of 2012. The building debris were removed and disposed of at ERDF. The demolition was performed with Radiological and Industrial Hygiene controls. The area was down-posted and backfilled with clean fill.

Description of Deferral (as applicable):

None

Section 2: Underlying Soil Status

☐ No waste site(s) present. No additional actions anticipated.

☒ Documented waste site(s) present. Cleanup and closeout to be addressed under Record of Decision.

☐ Potential waste site discovered during D4 operations. Waste site identification number <to be> assigned.

Cleanup and closeout to be addressed under Record of Decision.

Description of Current/As-Left Conditions:

The buildings and slab foundations were removed and disposed of at EDRF. A GPERS survey is included as Attachments 3.

Identification of Documented Waste Site(s) or Nature of Potential Waste Site Discovery (as applicable):

300-15: 300 Area Process Sewer. Rejected UICs WIDs sites: 300-199: 3745A Steam Condensate Misc. Stream # 380 and 300-200: 3745B Steam Condensate Misc. Stream # 379, were removed during demolition.

Section 3: List of Attachments

1. Facility information (building history, characterization and identification of documented waste sites).
2. Project photographs.
3. GPERS Survey

FACILITY STATUS CHANGE FORM

DOE-RL	Date 7/3/2012
Lead Regulator ☒ EPA ☐ Ecology	Date July 5, 2012

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D4 EPL: Chris Strand, L7-10
Sample Design/Cleanup Verification: Megan Proctor, H4-22
FR Engineering: Jason Olsson, L6-06
FR EPL: Chris Strand, L7-10

Attachment 1: Facility Information

Building History:

The 3745A Building, known as the "Electron Accelerator" Building, was constructed in 1947-1948 as shielded laboratory space for health physics research involving ion bombardment in support of General Electric Hanford Company's Radiological Physics Group. The building and equipment were later used in support of Battelle Northwest/Pacific Northwest Laboratories' Occupation and Environmental Safety Department. A 2-million volt (MV) Van de Graff accelerator and controls console were installed in 1953 to provide high-dose x-ray exposure for routine calibration of dosimetry and hand-held, high-range radiation monitoring instruments used at the Hanford Site, replacing an x-ray machine that could not be operated reliably at the high dose required. The original console underwent considerable technological modifications since the 1970s. The accelerator was later modified to provide highdose-rate irradiation for studies of biochemical mechanisms in mammalian cells. Periodic health physics safety surveys conducted by Battelle led to the upgrade of the flashing lights and start-up horns on the building's roof used to alert 300 Area personnel that the accelerator was in use. Additional physical barriers and internal shielding were used to achieve a maximum dose rate of less than 2 mrem/hr within and around the 3745A Building during accelerator operations. The accelerator program was terminated in 1995 and the particle accelerators were removed. Washington State University leased 3745A, and 3745B from 1997 to about 1999 for its experimental physics program. The 3745A Building was used primarily for storage space.

3745A was a rectangular building with concrete block walls on a slab floor that measured approximately 73' (east-to-west) by approximately 17.5' (north-to-south). The main roof was 10' high and the high bay roof was 28.8'high. The roof was concrete with a tar and gravel finish. The center of this building consisted of a high-bay section designed to house a vertical standing accelerator. The south exterior wall was composed of concrete block that was augmented with poured concrete for radiation shielding. This poured concrete extended outward 18" from the building's concrete block walls. The west wall was composed of concrete block that has been similarly reinforced with poured concrete shielding. The shielding helped reduce the amount of radiation that escaped the building during accelerator operations. At the western end of the north side of the building was a reinforced concrete wall off set from the building.

The 3745B Building, known as the "Positive Ion Accelerator" Building was constructed in 1949 to provide a shielded laboratory instrument calibration and research using a 2-MV Van de Graff accelerator. Projects included the development of methods for calibrating neutron film badges and portable radiation measuring instruments. The accelerator had multiple beam tubes and used a variety of gases such as hydrogen, helium, and deuterium. Targets included beryllium, carbon, and tritium. The facility underwent many structural modifications to accommodate new projects, including studies involving protons. A tandem accelerator was added to the facility. Experimental work was shut down in 1995 due to budget cuts.

3745B was a rectangular building that evolved into its pre-demolition configuration through a series of additions. Initially, the building had a concrete floor, walls, and roof at the sample target area while the remainder was constructed of wood frame covered with asbestos shake siding. Subsequent additions to the north and south sides of the building were constructed of concrete block with some concrete shielding walls. All the tar and gravel roof areas had a slight slope for water run-off. A concrete block equipment storage addition 26' by 15' was added to the building in 1981. Heating and cooling was provided by steam and refrigeration, respectively.

Building Characterization:

Table 1 summarizes the industrial hygiene, radiological control, and asbestos samples collected in the 3745A and 3745B Buildings.

Table 1. Summary of Characterization Surveys at 3745A and 3745B.

Type	Date	Documented In	Results Summary
Pre-Demolition			
Asbestos	February 27, 2007	CCN # 132419 CCN # 132420	ACM was found in floor tile, wire insulation, roofing and TSI.
IH Surveys and Beryllium Characterization	3745A Jan 18, 2007	CNN 131816	Be, Cd, Cr & Pb found within background levels.
Radiological Surveys	December 7, 2006 December 6, 2006	RSR-300PS-06-2282 RSR-300PS-2253	No radiological contamination was identified.

Associated WIDs sites:

300-15, 300 Area Process Sewer.
Rejected WIDs sites (UICs): 300-199, Steam Condensate Misc. Stream # 389 at 3745A, and 300-200, Steam Condensate Misc. Stream # 379 at 3745B, were removed during demolition.

Anomalies Discovered During Demolition.

No anomalies were discovered during the demolition of 3745A and 3745B. A visual inspection of the excavation revealed no discolored or stained soil.

Attachment 2: Project Photographs

Figure 1: 3745A and 3745B on March 21, 2006

North

Figure 2. 3745A Building on May 22, 2006

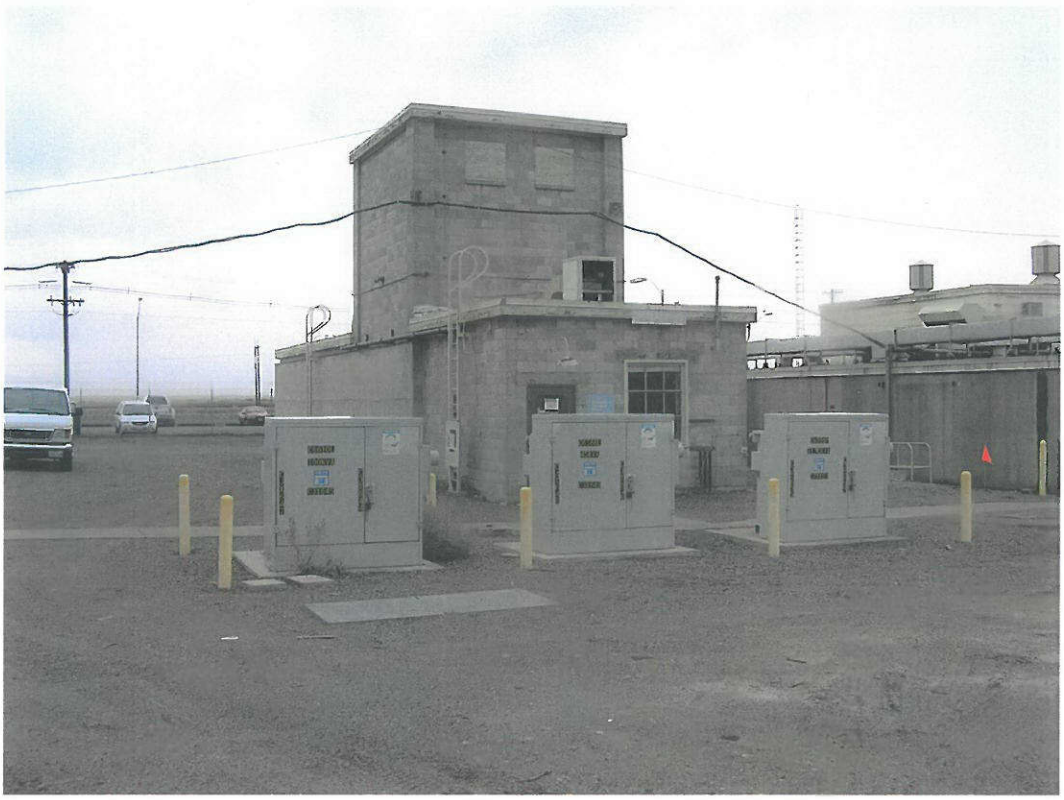


Figure 3. 3745B Building on May 22, 2006

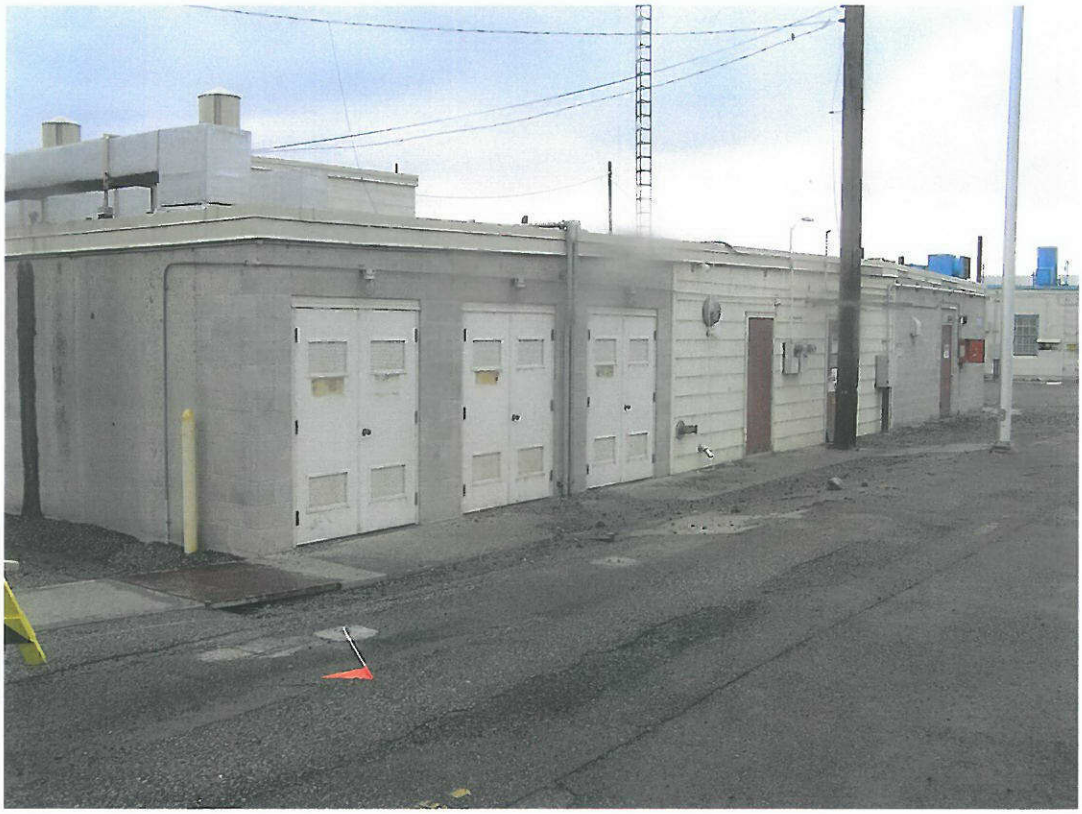
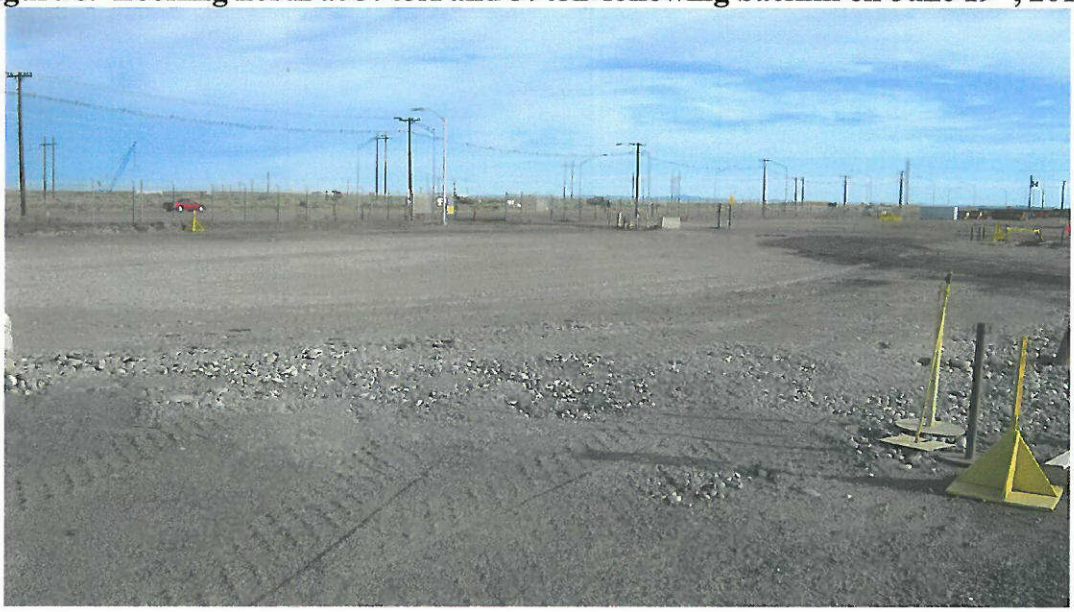


Figure 4. 3745A and 3745B after above-grade demolition on July 16, 2008

North

Figure 5. Looking north at 3745A and 3745B following slab removal on March 27, 2012.

Figure 6. Looking north at 3745A and 3745B following backfill on June 19th, 2012.

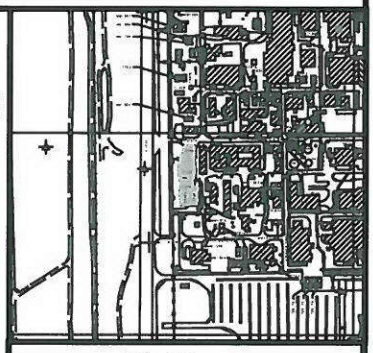


Attachment 3: GPERS Survey

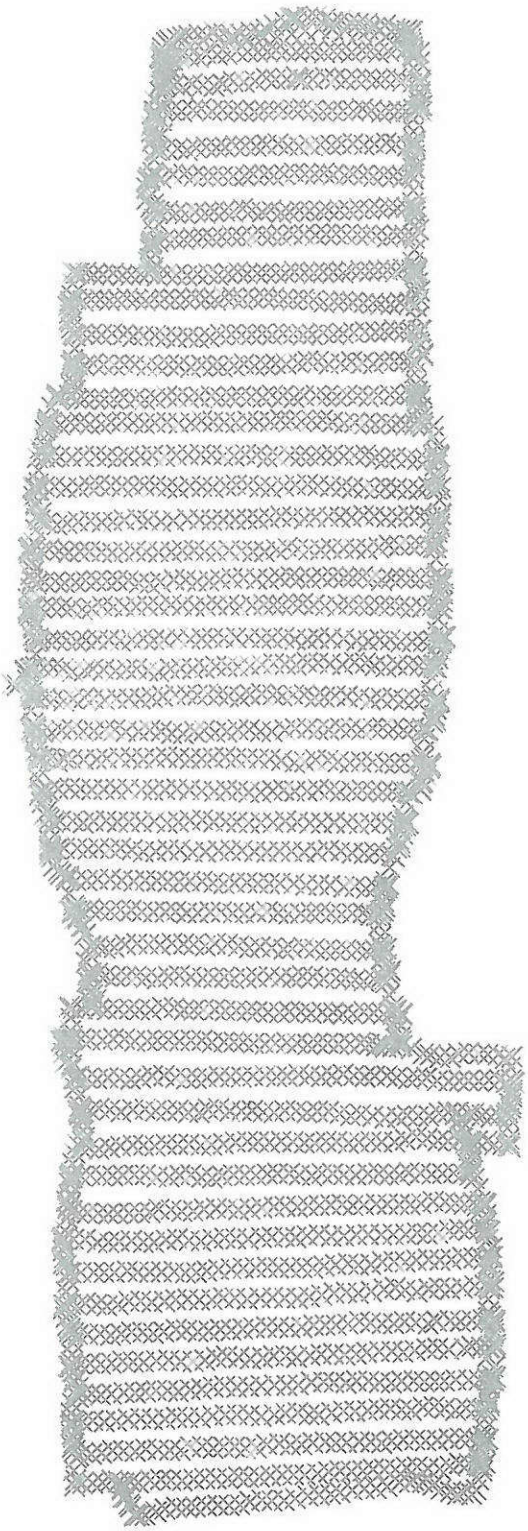
300 D4 - 3709, 3745A/B, 3746/A
GPERS Radiological Survey - Gamma Track Map

N

Bkg Location
465 meters NNE
1290 cpm



Site View



Net cpm

×	<1935
	1935 - 5000
	5000 - 10000
	10000 - 25000
	25000

Summary Statistics

Coverage File: D075
Number of Data Pnts: 2519
Type of Survey: gamma
Max GCPM: 2062
Avg Bkg CPM: 1290
Survey Date: 3/15/2012
Area Surveyed: 3646 m^2
Project File: ESRFRM120040
Pdf File: ESRFRM120040C

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Survey map Prepared by Bruce Coomer, ESI

Copy

0 2.5 5 10 15 20 25
Meters